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on 175
c1945
★ Northrup, King & Co.
cFarm seeds

★
useful **FARM**
INFORMATION

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U. S. Department of Agriculture



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COMMONLY ACCEPTED BUSHEL WEIGHTS And Quantities Of Seeds Usually Sown Per Acre

Farm Seeds and Grasses	Lbs. per bu.	Quantity, per Acre
Alfalfa	60	15 to 20 lbs.
Barley	48	96 lbs.
Beans, Field	60	40 to 60 lbs.
Beans, Lima	56	60 to 90 lbs.
Bromus, Inermis	14	15 to 20 lbs.
Buckwheat	50	50 lbs.
Clover, Alsike	60	8 to 10 lbs.
Clover, Medium Red.....	60	10 to 12 lbs.
Clover, Mammoth Red.....	60	8 to 12 lbs.
Clover, Sweet	60	12 to 15 lbs.
Clover, White	60	5 to 8 lbs.
Corn, in hills.....	56	8 to 10 lbs.
Corn, in drills for soiling or silo where ears are desired.....	56	8 to 10 lbs.
Corn for Fodder.....	56	30 to 56 lbs.
Cow Peas, broadcast.....	60	60 to 90 lbs.
Flax, broadcast	56	25 to 30 lbs.
Grass, Canadian blue (solid seed).....	14	15 to 25 lbs.
Grass, Kentucky blue (solid seed).....	14	20 to 30 lbs.
Grass, English or Perennial Rye Grass....	24	25 to 30 lbs.
Grass, Italian Rye Grass.....	24	35 to 40 lbs.
Grass, Meadow Fescue	24	20 to 25 lbs.
Grass, Orchard	14	22 lbs.
Grass, Red Top (solid seed).....	32	8 to 12 lbs.
Grass, Lawn Seed, 1 lb. for 300 sq. ft.....	100 to 125 lbs.
Grass, Western Rye or Slender Wheat Grass	14	15 lbs.
Grass, Meadow Fox Tail.....	14	22 lbs.
Grass, Tall Meadow Oat.....	14	30 to 40 lbs.
Kaffir Corn, broadcast.....	56	40 to 50 lbs.
Millet, for hay.....	50	50 lbs.
Millet, for seed.....	50	30 lbs.
Oats	32	64 to 96 lbs.
Peas, in drills.....	60	120 to 150 lbs.
Peas, broadcast	60	150 to 180 lbs.
Rape, Dwarf Essex, alone, broadcast.....	50	6 to 8 lbs.
Rape, Dwarf Essex, alone, in drills.....	50	4 lbs.
Rape, Dwarf Essex, with grain	50	1½ lbs.
Reed's Canary Grass or Phalaris.....	32	4 to 6 lbs.
Rye, broadcast	56	56 to 84 lbs.
Sorghum, for syrup.....	50	8 to 10 lbs.
Sorghum, for fodder.....	50	50 to 60 lbs.
Soy Beans, broadcast.....	60	60 to 90 lbs.
Soy Beans, in drills.....	60	30 to 45 lbs.
Speltz	40	80 lbs.
Sudan Grass, broadcast.....	40	20 to 25 lbs.
Sudan Grass, in drills.....	40	8 to 10 lbs.
Timothy	45	10 to 12 lbs.
Vetches, broadcast	60	50 to 60 lbs.
Wheat	60	90 lbs.

NORTHROP, KING & CO.'S FARM SEEDS

NORTHLAND BRAND FARM SEEDS, because of their 60 years of dependable service in this district, have become the standard by which farm seed values are compared. For purity, germination and vigor to produce excellent crops, there is no superior. Each lot is selected from crops known to be of excellent quality and then all foreign matter is removed as thoroughly as it is humanly possible to do.

Play Safe— Buy Farm Seeds by Brand

Brands give you the protection of the producer's reputation. A reputation for dependability, gained through many consecutive years of service in a district, is an asset to those who buy the merchandise as well as to those who produce it. This is especially true in the case of farm seeds—where value cannot be ascertained by inspection. Then, too, Northrup, King & Co.'s Farm Seeds are distributed only through local dealers—a convenience and another assurance of better quality because they are backed by the reputation of the dealer in addition to the 60 year reputation of Northrup, King & Co.



ALFALFAS

For Finest Hay and Permanent Pasture

Because the growing and harvesting season through the Northern area during 1944 were generally unfavorable, Alfalfa seed supplies are limited and some origins and varieties will be unobtainable.

GRIMM Generally accepted as the hardiest strain of Alfalfa. Its blossoms usually show considerable variegation and the root type is more spreading and low set. To insure genuineness of Grimm Alfalfa, it can be obtained in bags officially sealed by the state where produced. State Sealed Grimm is verified as to variety and origin by various State or Canadian seals. Limited supplies available.

COSSACK Another variegated strain, originally introduced from Russia. It usually shows more yellow flowers than the Grimm. It is considered about as winter hardy as Grimm. Practically no stocks.

MINNESOTA VARIEGATED Produced under severe conditions in Minnesota. The variegated blossoms indicate that most of the producing fields that have survived the extreme cold of winters and heat of summers were from original plantings of Grimm Alfalfa. 1944 season most unfavorable. Almost total crop failure.

ALFALFA—Continued

CANADA VARIEGATED A strain similar to the Minnesota grown but grown in Canada. On account of the short crop in Canada, probably no seed will be allowed for export to the United States during 1944.

Other Alfalfas

Other strains most generally used and best adapted to the North Central states are Montana grown Alfalfa, Idaho grown Alfalfa, Utah grown Alfalfa, Kansas grown Alfalfa, and Dakota grown Alfalfa. Supplies from some of these states will be in very limited quantities and others in fair supply.

Bromus and Alfalfa in Combination

To supplement the short supplies of Alfalfa and to provide for good yields of hay and an abundance of nutritious, succulent and palatable pasturage, the seeding of Brome Grass with Alfalfa is recommended by all state experimental stations. A mixture of 6 to 8 pounds Alfalfa, 3 to 4 pounds Red Clover, and 6 to 10 pounds Brome Grass is recommended for heavy soil, and 6 to 8 pounds Alfalfa and 6 pounds Bromus are enough for sandy soil. The use of nurse crops that ripen early is recommended.

Send for Northrup, King & Co.'s Bulletin on Bromus.

When Buying Minnesota, Canada or Registered Grimm Alfalfa, Be Sure It Is In One of These Bags



Green Bag

Blue Bag

Green Bag

CLOVERS

For Hay, Soil Improvement, Rotation

MAMMOTH RED Grown largely for pastures and to restore fertility to depleted soils. Makes good hay if cut soon enough although it has a coarser stem than Medium Red Clover. Supplies fine grazing for stock. Sometimes yields more seed than Medium Red Clover. It ripens later, and makes only one crop.

MEDIUM RED Regarded as the most valuable of the Clover family. Sometimes called June Clover. It makes two crops the second year. The first is usually cut when it is in blossom for hay; the last crop may be harvested for seed, cut for hay, or plowed under to add fertility to the soil. May be sown either in the spring or fall, and if no other grasses are used, at the rate of 12 to 15 pounds to the acre, according to quality and seed used and condition of the soil.

ALSIKE OR SWEDISH One of the hardest varieties known. It will do better on moist land than any other variety of clover, and is suitable for either hay or pasture. When sown with other grasses, it forms a thick undergrowth and greatly increases the yield. It is frequently sown both with Medium Red Clover and with Timothy, and the quality of hay thus produced is excellent. Finer and more leafy than Medium Red Clover and cattle prefer it.

DWARF SWEET CLOVER

Mostly White Blossoms—Grundy County Type

A biennial sweet clover, mostly white blossom, that grows to the height of $3\frac{1}{2}$ to 5 feet. Low branching, has finer stems than other varieties and matures earlier. Sow 10 pounds of seed per acre.

TALL SWEET CLOVER

Mostly White Blossom

Now grown on almost every farm in the Northwest for hay, pasture, seed and as a wonderful soil builder. Puts more nitrogen in the soil per acre than 20 tons of barnyard manure. Makes pasture earlier than other crops and will keep stock in good condition until winter regardless of heat and drouth. Wornout fields soon become profitable where sweet clover is grown for pasture or plowed down while green. A biennial.

SWEET CLOVER

Yellow Blossom

Not so prolific in growth as the white blossom type. From ten days to three weeks earlier. A biennial.

TO FIND NUMBER OF TONS OF HAY IN LONG SQUARE STACKS

RULE—Multiply the length in yards by the width in yards, and that by half the altitude in yards, and divide the product by 15. **Example**—How many tons in a stack 10 yards long, 5 wide and 9 high? **Process**— $10 \times 5 \times 4\frac{1}{2} = 225$, divided by 15—15 tons.

TO FIND THE NUMBER OF TONS OF HAY IN CIRCULAR STACK

RULE—Multiply the square of the circumference in yards by four times the altitude in yards, and divide by 100, making the cubic yards in the stack. Then divide by 15 for the number of tons. **Example**—How many tons of hay in a circular stack whose circumference at the base is 25 yards, and height 9 yards? **Process**— $25 \times 25 = 625$, $625 \times 35 = 22,500$, divided by 11—225, divided by 15—15 tons.

TO DETERMINE CAPACITY OF BINS, CRIBS, ETC., IN BUSHELS OF PRODUCTS

Compute cubic feet by multiplying length by width by height for oblong or square bins, or 3.1416 by radius squared by height for cylindrical bins. Multiply by 4 and divide by 5 to find number of bushels. If corn is on the ear deduct $\frac{1}{3}$ from the result.

PASTURE and HAY CROPS

BROMUS INERMIS Drought defying, frost resisting. It yields enormous crops of splendid hay and affords early and abundant pasturage. Starts two to three weeks earlier in the spring than native prairie grass and keeps green in autumn longer than most grasses. Bears up well under hot summer suns. Will grow under dry conditions and can also stand being covered with water for one or two weeks in the early spring. 15 pounds of good Bromus Inermis seed per acre is sufficient. Particularly recommended in combination with Alfalfa.

TIMOTHY As a hay crop Timothy is probably unsurpassed by any other grass. It is greatly relished by all kinds of stock. It yields more nutritive matter than any other grass or forage plant. It is not suited for a permanent pasture as it will run out in a few years. It is well adapted to early spring grazing as it starts up quickly in the spring, and in favorable fall weather can be pastured.

KENTUCKY BLUE GRASS This makes the best, sweetest and most nutritious pasture for all kinds of stock. Very hardy and is uninjured by cold or dry weather, hot sun or tramping of hoofs. The roots are thick and stout, forming a tough sod. Blue Grass requires two years to get well started, so it is often sown in mixture with other grasses. Sometimes called "June Grass." Sow 20 to 25 lbs. of "Northland" Brand seed per acre.

RED TOP (Solid Seed). A valuable grass for moist, rich soils where it thrives very luxuriantly. A good variety to sow with Timothy and Clover for meadow or pasture and more permanent than either of the other two. Should be fed close. If it is allowed to grow up to seed, cattle dislike it. Has been grown successfully even on alkali land where other grasses failed. Commonly known as Herd's Grass. Only ten pounds of "Northland" Brand required to the acre.

REED CANARY GRASS or Phalaris. "It thrives in locations where the water table is practically at the surface of the soil all the time and above the surface part of the time. No other forage crop, the seed of which is available in quantity, will thrive so well on highly productive lands that are too wet for most other crops. Broadcast 4 to 6 lbs. per acre."

SUDAN GRASS The ideal Emergency Hay and Pasture crop for late planting. For best results, broadcast 30 to 40 pounds per acre, after the ground is thoroughly warm. May 15 to June 15, on the average, is as early as it is practical to sow Sudan, and it may be sown as late as July or August.

CRESTED WHEAT GRASS A hardy, drought resistant, perennial bunch grass introduced from Russia. It has the ability to grow at extremely low temperatures and where moisture supplies are limited. Quite dormant during heat of mid-summer. Very palatable to all classes of livestock. Can be sown Spring or Fall, in close drills, using 10 to 12 pounds of seed per acre.

MILLET

Early Fortune (Red Proso) The seed is of a beautiful red color, two or three times the size of German Millet. Heads in from 25 to 35 days. Gives a large yield both of seed and fodder. It can be fed to horses and other stock without injury, even when cut so late that the seed has formed. Seeds are smooth, heads are branching.

MILLET—Continued

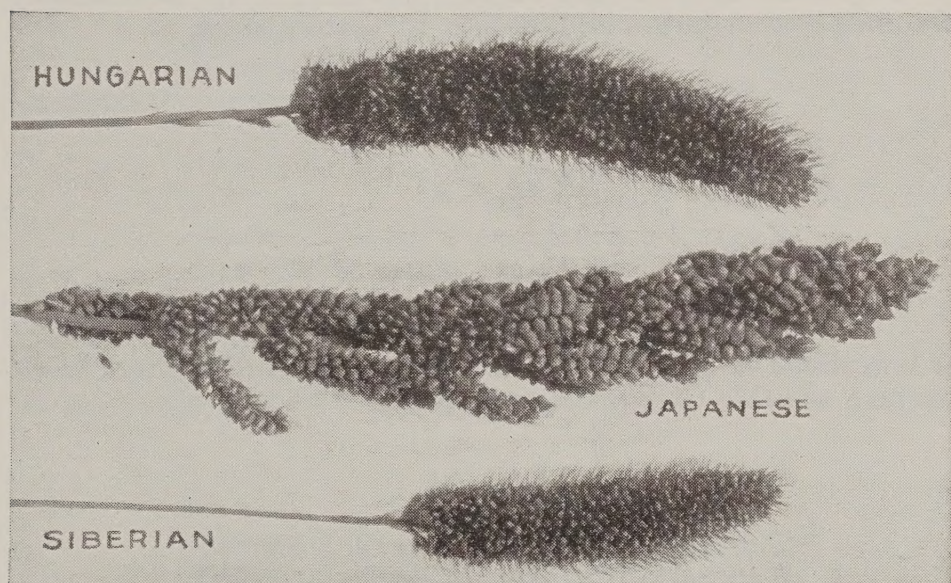
German Very sweet, palatable, and when fed to dairy cows produces a large amount of milk. On good, rich soil it grows four to five feet high. It is very tender if cut when it is in full bloom. About three-fourths of a bushel of seed is sown to the acre. A good yield, three to five tons of hay per acre.

Broom Corn or Hog (White Proso) Grown for the same purpose as other Millets, but makes inferior hay unless cut very young. Seed makes very fine feed for poultry and young chicks. Matures in about two months from sowing seed.

Hungarian (Dark Seed.) Often called Hungarian Grass. The hay is fine and of excellent feeding value. Especially valuable on account of requiring such a short season to make a fine crop. Frequently used as a catch crop.

Japanese Improperly called "Billion Dollar Grass." Entirely distinct from all other Millets. Grows 6 to 9 feet high, stands up remarkably and yields enormous crops. When cured, it makes good hay, superior in quality to corn fodder. Relished by all kinds of stock. May be sown broadcast, 15 pounds an acre, but it is better to sow in drills 12 to 18 inches apart, using 10 to 12 pounds to the acre. Does best on low, moist ground.

Siberian Earlier than either German or Hungarian, and consequently valuable for the North, and yields remarkably. Extremely hardy, withstanding drought wonderfully and is about two weeks earlier than German Millet. The leaves are tender, making excellent hay.



MILLET

TO MEASURE CORN IN CRIBS

Ear corn of good quality, measured when settled, will hold out at $2\frac{1}{2}$ cubic feet to the bushel. Inferior quality, $2\frac{3}{8}$ to $2\frac{1}{2}$ cubic feet.

RULE—At $2\frac{3}{8}$ cubic feet to the bushel, divide the cubic feet in crib by $2\frac{3}{8}$, or multiply by 8 and divide by 19.

At $2\frac{1}{2}$ cubic feet to the bushel, divide the cubic feet in crib by $2\frac{1}{2}$, or multiply by 2 and divide by 5.

TO FIND HEIGHT OF TREE OR BUILDING

Set up a stick and measure its shadow. Measure length of shadow of tree. Length of shadow of tree, times height of stick divided by length of shadow of stick equals height of tree.

GRASS COMBINATIONS

for PERMANENT PASTURES

There are no standard combinations to be recommended for all conditions, and in many cases it is advisable to consult the local County Agricultural Agent or the State Experimental Station. However, the following combinations have been found to be quite satisfactory for conditions as indicated:

No. 1

Alfalfa, 8 lbs.

Brome, 7 lbs.

A very satisfactory combination for a long-lived pasture, but care should be taken not to pasture heavily until well established.

No. 2

Alfalfa, 7 lbs.

Red Clover, 3 lbs.

Bromus, 8 lbs.

A long lived Bromus and Alfalfa pasture. Very satisfactory Bromus and Alfalfa combination for heavy soils.

No. 3

Timothy, 2 lbs.

Brome Grass, 6 lbs.

Kentucky Bluegrass, 2 lbs.

Medium Red Clover, 4 lbs.

Alsike Clover, 2 lbs.

White Clover, 1 lb.

A long-lived Bromus, Kentucky Bluegrass and White Clover pasture suitable for good sandy soils.

No. 4

Timothy or Meadow Fescue, 6 lbs.

Kentucky Bluegrass, 2 lbs.

Medium Red Clover, 4 lbs.

Alsike Clover, 2 lbs.

White Clover, 1 lb.

A satisfactory mixture for long-lived Bluegrass and White Clover pasture on good soil which is adapted to Red Clover.

No. 5

Brome Grass, 6 lbs.

Crested Wheat Grass, 4 lbs.

Alfalfa, 5 lbs.

Sweet Clover, 4 lbs.

A good combination for a long-lived pasture in a territory of limited rainfall.

No. 6

Timothy or Meadow Fescue, 8 lbs.

Medium Red Clover, 4 lbs.

Alsike Clover, 2 lbs.

Inexpensive mixture well suited to short rotation.

GRASS COMBINATIONS

for PERMANENT PASTURES

The permanent pasture combinations on this and the opposite page are not offered as prepared mixtures by Northrup, King & Co. or by any other seed house. Farmers wishing to grow one of these pasture combinations may obtain the separate grass seed items from any Northrup, King & Co. dealer.

No. 7

Sweet Clover, 12 lbs.

Timothy or Meadow Fescue, 6 lbs.

Inexpensive mixture well suited to short rotation.

No. 8

Reed Canary Grass, 6 lbs.

Especially recommended as a permanent pasture for peat and muck soils.

No. 9

Timothy or Meadow Fescue, 6 lbs.

Alsike, 4 lbs.

Kentucky Bluegrass, 8 lbs.

A good permanent mixture for moist muck soils.

No. 10

Alsike, 3 lbs.

Red Clover, 1 lb.

Kentucky Bluegrass, 6 lbs.

Timothy, 5 lbs.

Red Top, 4 lbs.

A good mixture for slightly sour soil.

No. 11

Alsike, 4 lbs.

Alfalfa, 4 lbs.

Sweet Clover, 4 lbs.

Red Top, 5 lbs.

A good mixture for sandy soils.

No. 12

Timothy or Meadow Fescue, 5 lbs.

Red Clover, 3 lbs.

Sweet Clover, 3 lbs.

Kentucky Bluegrass, 5 lbs.

A long-lived pasture for soils average or above average in fertility.

No. 13

Timothy, 5 lbs.

Alsike, 3 lbs.

Red Top, 4 lbs.

Kentucky Bluegrass, 4 lbs.

A recommended mixture for soils below average fertility and slightly acid.



Stars

Listed below are the varieties of Kingscrot Hybrid Corn together with brief descriptions of their maturity and characteristics. See your KX dealer and select one or more of these star performers for your farm.



KINGSCROST K3 Recommended for central Iowa, northeastern Nebraska, north central Illinois and Indiana. It has a relative maturity of 120 days. The outstanding feature of Kingscrot K3 is the unusually large ear it develops. Its deep soft starch kernels are highly recommended by feeders for fine performance in the feed lot.



KINGSCROST KY Recommended for the northern half of Iowa, northeast Nebraska, northern Illinois and northern Indiana. Its relative maturity is 115 days. KY is noted for its resistance to stalk breakage, lodged plants and dropped ears. It is easy to pick in dry weather and has that new feature—short type, convenient-to-handle plant growth. KY is a heavy yielder and a good corn for feeding.



KINGSCROST KR Recommended for southern Minnesota and northern Iowa, southeast South Dakota, southern Wisconsin and southern Michigan. The relative maturity of KR is 110 days. It has a vigorous germination and a healthy uniform plant growth which insures better stands and higher yields. It greatly resists summer lodging, fall stalk breakage and ear-droppage. Farmers invariably report overruns at shelling time on their early season estimates of Kingscrot KR yields.



KINGSCROST KO Recommended principally for southern and south central Minnesota. Its relative maturity is 105 days. The principal feature of Kingscrot KO lies in its fall drying characteristics releasing its ear moisture rapidly for early cribbing. Other advantages are stalk rot resistance, short plant growth and an excellent yield, rich in feeding value.



KINGSCROST M2 Recommended for southeastern Minnesota, Wisconsin and parts of Michigan with a relative maturity of 105 days. A special purpose hybrid for Ensilage, Shredding or Grain. It produces an abundance of long, wide leaves making it a favorite for ensilage. Its unusual ear length coupled with freedom from barren stalks is bringing new yield records to many corn fields. Rapid drying of the ears after maturity allows for early safe cribbing.

F THE CORN BELT

★ **KINGSCROST KN** Recommended for south-central Minnesota, south-central Wisconsin, south-central Michigan and eastern South Dakota. It has a 105 day relative maturity. Kingscrost KN is remarkable for its early spring growth and its yielding ability. It has a moderate length ear with outstanding kernel depth. Other advantages are its deep roots, disease resistant stalks and tolerance to the corn borer.

★ **KINGSCROST KS** Recommended through south-central and central Minnesota, central Wisconsin, central Michigan and northeastern South Dakota. Relative maturity 100 day. Kingscrost KS has been developed on an entirely new hybridizing principle, yielding as much as many hybrids which are 10 days later in maturity and surpassing them in standability. It has a short plant without loss of forage for ensilage and produces high quality, rapid drying ears of unusual length which can be cribbed with a large margin of safety.

★ **KINGSCROST D4** Recommended for the 97 to 100 day growing sections. It has a relative maturity of 97 days. Kingscrost D4 has been a favorite for many years and is a high yielding corn with a safe maturity. Its stalk structure makes it satisfactory for shredding and its abundant foliage makes it desirable for fodder or early ensilage. Other features of D4 are its rapid spring growth, remarkable yield, freedom from barren stalks and a wide range of adaptation to varying soil types.

★ **KINGSCROST A6** A long time favorite with farmers in the 95 day maturity sections. It produces considerably larger plants and higher grain yield than early strains of Minnesota No. 13. Kernels are dry and high in soft starch. Because of its large leafy plants Kingscrost A6 is recommended for either extra early ensilage or grain purposes.

★ **KINGSCROST KE1** 90 day relative maturity or approximately the same maturity as Haney Strain Minnesota No. 13. The most valuable feature of this hybrid is the fact that it combines earliness with exceptional plant size and large grain yield. This combination of high yields of both grain and fodder appeal to most northern farmers who feed the entire corn plant.

★ **KINGSCROST KE2** Comparable to Falconer and Thorp strain Minnesota No. 13 with relative maturity of 85 days. Outstanding qualities of Kingscrost KE2 are its rapid seedling growth (a most valuable feature in the cold spring areas of the north), exceptional resistance to lodging, adaptation to mechanical picking, and large yield.

★ **KINGSCROST KF** (Falconer Type) A hybrid with 80 day relative maturity. Its rapid spring growth at low temperature, adaptation to short seasons and its leafiness are from its flint parent. Its non-suckering, tall plants, high placed ears and stalk strength are from its dent parent. Ideal for mechanical picking and a heavy yielder. Semi dent.

FORAGE and FODDER CROPS

For All Purposes

MINNESOTA SORGHUM or AMBER CANE

An early variety of sorghum originated in Minnesota.

Valuable for the manufacture of sorghum syrup and for forage purposes because of its earliness and high sugar content. Plant in drill rows. Cultivate same as corn.

Waconia Orange Sorghum Cane

An early variety of sorghum cane developed by careful selection for high yield of sorghum. Matures in Minnesota climate and is a heavy yielder of forage.

FIELD PEAS

Canada Yellow

Height of vine $3\frac{1}{2}$ to 4 feet. Extensively grown in Canada, Wisconsin and other pea growing sections. Has a large sale, not only for agricultural purposes, but for use in soups.

White Marrowfat

Height $3\frac{1}{2}$ feet. Grown on account of its great quantities of pods and for canning purposes. Vines of strong, sturdy growth but mature the pods quite late. Large, cylindrical, light colored pods well filled with round, smooth, light yellow peas, somewhat dry and mealy.



SOY BEANS

SOY BEANS

Grown for hay, ensilage, grain and soil improvement. They produce hay equal in feeding value to Alfalfa. Valuable for planting where Clover has winter killed. For silage plant with corn using about 10 pounds per acre, producing silage of higher feeding value than corn alone. Sometimes plowed under as a green manure. Popular varieties for Minnesota, Wisconsin and Iowa are Manchu, Habaro, Minsoy, Mukden, Richland and Mandell.



SUDAN GRASS

SUDAN GRASS This popular hay and pasture crop is a native of tropical Africa and therefore it is necessary for the soil to warm up in the Spring before planting the seed. It may be sown as late as July or August but its season will then be quite short. It is usually big enough to pasture when five or six weeks old, or sooner if it gets 12 to 14 inches tall. It grows remarkably well during the hot dry weather of July and August. As a hay crop Sudan should be cut from the time the heads begin to appear until the seeds are in the soft, dough stage. The best hay is from the early cutting.

FODDER CORN Fodder corn produces more tons of feed per acre than any other grain or grass—15 to 25 tons being the range. Fodder corn may be divided into five classes: Large Southern Varieties; Medium Dent Varieties; Early Dent Varieties; Flint Varieties; Sweet Varieties. Sow broadcast 2 or 3 bu. per acre for supplemental pasture. May be sown up to July 1st. Northrup, King & Co.'s stocks include "Elephant," "Yellow," "Giant," and Sweet.

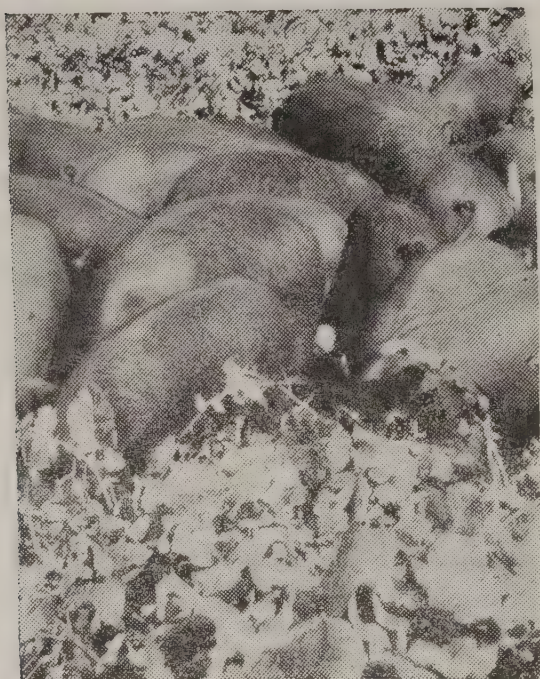
MILLET The millets, because of their early maturity, are very commonly used as catch crops when other forage or hay crops may have failed, or they may be used to follow such crops as early potatoes and barley. Make sweet tender hay when cut at the right stage and the seed makes excellent feed for poultry and stock. Several of the millets are quite drought resistant, which is always an advantage in late planted crops. Look on page 4 for description of varieties.

SALARIES OF NATIONAL GOVERNMENT OFFICIALS

President of the United States.....	\$75,000.00
Vice-President	15,000.00
Cabinet Members	15,000.00
Chief Justice of the United States.....	20,500.00
Associate Justices of Supreme Court.....	20,000.00
Members of Congress.....	10,000.00
Speaker of the House.....	15,000.00

FORAGE CROPS (Continued)

DWARF ESSEX RAPE



An annual resembling in leaf and stalk, the Ruta Baga, but both leaves and stalk are more numerous and of a taller habit of growth. A forage plant which may be eaten off by any kind of live stock, but it is pre-eminently adapted for cattle and swine. A good crop will furnish at least 12 tons of green feed an acre. Thrives best on good soil, rich in vegetable matter. Slough lands are excellent. Sow broadcast, 5 pounds an acre. Sow in rows thirty inches apart and cultivated 1 to 2 pounds an acre.

Rape Is Nourishing For Hogs.

SEED GRAINS

Vigorous and Extra Clean

OATS

Anthony A midseason variety, which is a cross between White Russian and Victory Oats developed for stiffness of straw, heavy yield and resistance to stem rust. Especially adapted to Northern half of Minnesota.

Marion A variety developed at the Iowa Experiment Station. It is an early white oat that is resistant to leaf and stem rust and smut. Adapted to sandy soils.

Tama Resembles Vicland in all characters and has yielded slightly more in some locations. A cross of the same two varieties—Victoria and Richland.

Vicland Early yellow oat developed in Wisconsin. Short, stiff, straw—resistant to both smut and rust. Very heavy yielder. The most popular oat at this time. A cross between a South American strain and a high yielding Iowa oat.

SILO CAPACITY

Size of Silo	Tons	6 Mo. Feed for No. of Cows
10x20.....	28	7
12x20.....	40	11
12x24.....	50	13
14x22.....	62	17
14x24.....	67	19
16x24.....	86	25
16x26.....	95	27
16x30.....	108	31
18x28.....	120	33

WHEAT

Regent Beardless, with white, smooth chaff. Straw is strong, medium long and slightly taller than Thatcher. Dark red, rough, large kernels. Moderately resistant to stem and leaf rust and covered smut.

Rival Bearded, long strawed. Moderately resistant to stem rust and leaf rust. Rival usually yields higher than Thatcher. The milling and baking qualities are satisfactory. This variety was released in 1939.

Thatcher A Spring Wheat developed by the Minnesota Experiment Station for its resistance to stem rust. A good milling wheat, selling on a par with Marquis.

WINTER WHEAT

Marmin A bearded winter wheat similar to Minturki in yielding ability, winter hardiness, disease resistance and time of maturity. Has higher bushel weight, harder texture of grain and produces whiter flour than Minturki.

Minturki A very hardy variety, in fact, the hardiest of hard winter wheats. Red beard with strong straw. Originated from a cross between Turkey and Odessa, the crossing being accomplished at the Minnesota Agricultural Experiment Station in 1902 and was first distributed in 1919. It has outyielded other varieties of winter wheat in Minnesota and seems to be particularly adapted to this state. Of good baking quality.

BARLEY

Wisconsin No. 38 A smooth awned Barley developed by the Wisconsin station. Resistant to Barley stripe. Has a large head and plump kernel, and is about 4 days later than Velvet or Oderbrucker. Stands the heat and dry weather better than the earlier Barleys. Many yields of 40 to 50 bushels are reported. A fine malting variety.

L Barley A new six row rough awned malting barley developed in North Dakota. It is about a week to ten days earlier than Wisconsin 38 and reports from Minnesota and the Dakotas show very satisfactory yields in 1944 which was not a favorable year for barley in general.

RYE

Spring Makes an excellent crop where winter grain has been killed out, or for sowing where a fall crop has not been planted. If desired it can be turned under as a good fertilizer. Sow seed same time as other spring grain.

Rosen (Winter) Introduced by the Michigan Experimental Station, and produces grain which is considerably larger than other Winter Sorts. Kernels are plump and heavy, bright yellowish-blue in color. Straw is stiff and strong. A heavy yielder considered superior to any other Winter Rye.

SEED GRAINS (Continued)

FLAX

Bison A large seeded Wilt Resistant Variety, developed by the North Dakota Experiment Station. This variety has proven more satisfactory than any other for growing particularly on older farms in Minnesota and Dakota.

Red Wing A variety somewhat earlier than Bison and with smaller seed. A good yielder especially in southern Minnesota and Iowa.



BISON FLAX

BUCKWHEAT

Japanese Has the advantage of remaining in bloom for a considerable period and produces seed earlier. On this account it can be grown farther north. Resists drouth and blight very well. Seed is rich dark brown in color.

Silver Hull It is early and remains longer in bloom than other sorts. A fine variety for honey bees. Grain is of a beautiful light gray color, and has a thin husk.

SPELTZ-EMMER

A dry land grain introduced from Russia. A species of drought-resisting barley, and not inclined to rust. Thrives on poor land, prairie regions, and in stony ground. Yields heavier than oats or barley. Sow 70 to 80 pounds per acre.

Plant Food Required By Crops

	Acre Yield	Nitrogen	Phosphoric Acid	Potash
Alfalfa	4 tons	190.4	43.0	178.4
Blue Grass	1 ton	26.6	10.8	42.0
Clover	2 tons	82.0	15.6	65.2
Corn	75 bu.	69.6	27.3	16.5
Timothy	2 tons	39.6	12.4	54.4
Oats	50 bu.	32.0	13.0	9.6
Rye	35 bu.	52.6	24.0	40.0
Soy Beans	25 bu.	129.1	36.0	86.0
Barley	50 bu.	56.7	25.0	48.0

Duration and Frequency of Heat in Normal Farm Animals

	In Heat for	If Not Impregnated Heat Will Occur in
Mares	5 to 7	3 to 6 weeks
Cows	2 to 3	3 to 4 weeks
Ewes	2 to 3	17 to 28 days
Sows	2 to 4	21 days

Average Period of Gestation

Mare	48½ wks. or 340 days	Extremes, 307-412 days
Cow	40½ wks. or 283 days	Extremes, 240-311 days
Ewe	22 wks. or 150 days	Extremes, 146-157 days
Sow	16 wks. or 114 days	Extremes, 109-120 days

POSTAL RATES

Always consult your Postmaster when in doubt.

FIRST CLASS — Sealed letters for local delivery, per ounce 3c
 Sealed letters for delivery outside your city or town, per ounce 3c
 Registered letters, up to \$5 value.....20c
 Increased rates on high values.

SECOND CLASS—Newspapers and publications when mailed by private party, per 2 ounces..... 1c

THIRD CLASS—Unsealed printed matter, without personal message, weighing less than 8 ounces, per 2 ounces1½c
 See Postmaster for rates and requirements on quantities.

POST CARDS—Private mailing cards and government postals, each 1c

SPECIAL DELIVERY—First Class, not over 2 pounds..13c
 Other than first class, not over 2 pounds.....17c
 Increased rates for any packages over 2 lbs.

FOURTH CLASS (PARCEL POST)—Unsealed books or material not in first or second class, weighing over eight ounces and not over 70 pounds.

PARCEL POST RATES

		ZONES						
Weight Lbs.	Local	1-2	3	4	5	6	7	8
		Up to 150 miles	150 to 300 miles	300 to 600 miles	600 to 1,000 miles	1,000 to 1,400 miles	1,400 to 1,800 miles	Over 1,800 miles
1	\$0.08	\$0.09	\$0.10	\$0.11	\$0.12	\$0.13	\$0.15	\$0.16
2	.09	.11	.12	.15	.18	.20	.24	.27
3	.09	.12	.14	.18	.23	.27	.33	.38
4	.10	.13	.16	.22	.28	.34	.42	.49
5	.10	.14	.18	.25	.34	.41	.52	.61
6	.11	.15	.20	.29	.39	.48	.61	.72
7	.11	.16	.22	.32	.44	.56	.70	.83
8	.12	.17	.24	.36	.50	.63	.79	.95
9	.12	.18	.26	.39	.56	.70	.89	1.06
10	.13	.19	.28	.43	.61	.77	.98	1.17

AIR MAIL—Mail of any kind may be sent by air, under the same conditions as ordinary mail, but at one rate only, per ounce..... 8c
 Air mail to men & women in the service, overseas, ½ oz., 6c

WEIGHTS and MEASURES

LINE OR LINEAR MEASURE

12 Inches	1 Foot
3 Feet.....	1 Yard
5½ Yards.....	1 Rod
320 Rods.....	1 Mile
1 Mile.....	5280 Feet

The following are also used:

1 Size.....	⅓ Inch
(Used by shoemaker)	
1 Hand.....	4 Inches
(Used in measuring the height of horses)	
1 Fathom.....	6 Feet
(Used in measuring depths at sea)	
1 Knot.....	1.15 Miles
(Used in measuring distances at sea)	

SQUARE OR SURFACE MEASURE

144 Square Inches.....	1 Square Foot
9 Square Feet.....	1 Square Yard
30¼ Square Yards.....	1 Square Rod
160 Square Rods.....	1 Acre
640 Acres.....	1 Square Mile

An acre is equal to a square whose side is 208.71 feet.

DRY MEASURE

2 Pints.....	1 Quart
8 Quarts.....	1 Peck
4 Pecks.....	1 Bushel
1 Bushel contains 2150.42 cubic inches or approximately 1¼ cubic feet.	

LIQUID MEASURE

4 Gills.....	1 Pint
2 Pints.....	1 Quart
4 Quarts.....	1 Gallon
1 Gallon contains 231 cubic inches.	
1 Cubic Foot equals 7½ gallons.	

FEEDING VALUE OF DIFFERENT HAYS

Kind of Hay	Water	Ash	Protein	Crude Fiber	Nitrogen-free extract	Ether extract (fat)
Mixed Grasses	15.3	5.5	7.4	27.2	42.1	2.5
Timothy	13.2	4.4	5.9	29.0	45.0	2.5
Orchard Grass	9.9	6.0	8.1	32.4	41.0	2.6
Red Top	8.0	5.2	7.9	28.6	47.5	1.9
Kentucky Blue Grass	21.2	6.3	7.8	23.0	37.8	3.9
Meadow Fescue	20.0	6.8	7.0	25.9	38.4	2.7
Perennial Rye Grass	14.0	7.9	10.1	25.4	40.5	2.1
Mixed Grasses and Clovers	12.9	5.5	10.1	27.6	41.5	2.6
Barley, cut in milk	15.0	4.2	8.8	24.7	44.9	2.4
Oats, cut in milk	14.0	5.7	8.9	27.4	41.2	2.8
Red Clover, Medium	15.3	6.2	12.3	24.8	38.1	3.3
Red Clover, Mammoth	21.2	6.1	10.7	24.5	33.6	3.9
Alsike Clover	9.7	8.3	12.8	25.6	40.7	2.9
White Dutch Clover	9.7	8.3	15.7	24.1	39.3	2.9
Crimson Clover	9.6	8.6	15.2	27.2	36.6	2.8
Lespedeza	11.0	8.5	13.8	24.0	39.0	3.7
Alfalfa	8.4	7.4	14.3	25.0	42.7	2.2
White Sweet Clover	22.1	6.5	11.6	24.2	33.2	2.4
Cowpeas	10.5	14.2	8.9	21.2	42.6	2.6
Soybean	11.8	7.0	14.9	24.2	37.8	4.3
Pea Vine	15.0	6.7	13.7	24.7	37.6	2.3
Vetch	11.3	7.9	17.0	25.4	36.1	2.3

LAWN SEED

For Farm and City Home Grounds

N. K. & Co. Have Been
Lawn Seed Specialists
For Over 50 Years.

The average farm does not cultivate a large expanse of lawn but every farm requires some outdoor living room carpet. That green surface around the house and out to the fence should be permanent and made up of grasses that are of fine texture and beautiful color. So we suggest Sterling Lawn Seed for your lawn. In the end it is much less expensive than cheaper mixtures because it gives you a lawn that comes back year after year and really gives pleasure. It is equally efficient for making new lawns and repairing old ones.

For Shady Places

No grass will grow in permanent shade. However, that part of the yard which is shaded only a part of the day can be kept green with Northrup, King's Shady Place grass seed.



Less Expensive Mixtures

N. K. & Co.'s Parkview contains a little domestic rye grass which permits a lower selling price. Glenwood Park and Homelawn mixtures produce fast growth at still lower cost.

In 5 lb., 10 lb., 25 lb., 50 lb. and 100 lb. bags—also in 1 lb. cartons.

BLUE GRASS — WHITE CLOVER — RED TOP — BENT GRASS


Everyone who farms knows the value of blue grass, white clover and red top as grasses for producing beautiful, thick and permanent growth. Bent Grass is still finer in texture and excellent for lawns. Northrup, King & Co. provide excellent quality seed of each.

PLANT
N. K. & CO.'S
LAWN
SEED



Alfalfa

An Outstanding Crop
For Pasture, Hay and
Soil Improvement



Alfalfa is a hardy perennial legume which grows well in all climates. It is a valuable crop for pasture, hay and soil improvement. It is a good source of food for livestock and its roots help to break up the soil and bring up the nutrients from below.

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NORTHROP, KING & CO.
Dependable Farm Seeds Since 1884
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NORTHROP, KING & CO.
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Biennial Sweet Clover


The Most Valuable Biennial
Clover For Pasture, Soil
Improvement, Hay



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Permanent Pastures Are Profitable

A GOOD permanent pasture is one of the most important of all farm assets. With covering and fertility, it raises the best feed for livestock and is a source of income.



Soy Beans

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A Perennial Pasture Grass

Crested Wheat Grass is another hardy, drought resistant perennial grass introduced from Russia. It is different from Bromus because it does not spread by underground root stalks but by seed.



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One Of The Most Valuable Annuals
Or Emergency Pasture Crops For
All Livestock



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Bromus Inermis
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For Permanent Pasture



The improvement of permanent pastures is recognized as one of our greatest farm problems. In the experiments that have been conducted in the various States through the Northern Corn Belt, Bromus Grass (*Bromus Inermis*) is becoming recognized as one of the most valuable grasses for permanent pastures in this area.

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A Hardy Perennial
Which Succeeds on Soils
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